

## Technical description

04/09/14

TECHNICAL DESCRIPTION	
<b>Product</b>	Syrup obtained by concentrating 100% natural raw sap, or “maple water.” Extraction of maple sap, concentration by osmosis and boiling to a sugar density of 66 °Brix.
<b>Advantages</b>	100% pure product, harvested exclusively from Canadian forests. No added preservatives. Natural product and from renewable sources. Maple industry means Quebec and Canadian forests are protected.
<b>Potential certifications</b>	Organic. To be confirmed by each producer.
<b>Origin</b>	Quebec, Canada.
<b>Declaration in the list of ingredients</b>	Maple syrup.
<b>Codes</b>	Provided by the processor.
<b>Compliance</b>	Meets the requirements of the Règlement sur les aliments [Food regulations] (P-29, r. 1) administered by the Ministry of Agriculture, Fisheries and Food of Quebec; the Règlement des producteurs acéricoles sur les normes de qualité et le classement [Maple Syrup producer regulations on quality standards and classification] (chapter M-35.1, r. 18) administered by the Federation of Quebec Maple Syrup Producers; and the Maple Products Regulations (C.R.C., c.289) administered by the Canadian Food Inspection Agency.
<b>Commercial sterility</b>	Yes, by heat treatment (canning).
<b>GMOs</b>	None.
<b>Pesticides</b>	No pesticide residue Maple syrup production does not require the use of products such as antibiotics, antiparasitics, pesticides, herbicides, growth promoters or similar. The risk of finding residues of these substances in maple syrup is therefore practically zero, in line with the recommendations in force in Quebec.
<b>Allergens</b>	None added at the sugar bush.
<b>Colour classes</b>	According to regulations in force, maple syrup colour classes are determined by the degree of light transmission at a wavelength of 560 nm according to the following scale: AA (75% to 100%), A (60.5% to 74.9%), B (44% to 60.4%), C (27% to 43.9%) and D (0% to 26.9%). The analysis is made using a spectrophotometer and is a common optical technique used in maple syrup production.

COMPOSITION	
<b>Ingredients</b>	Maple syrup.
<b>Brix</b>	66.0 to 67.5 °Brix
<b>pH</b>	5.5 to 8.0

SPECIFICATIONS	
<b>Organoleptic properties</b>	Syrupy liquid ranging in colour from light to dark depending on its class. Has a characteristic maple flavour and taste. Free of foreign flavours or odours.
<b>Sweetness</b>	0.60 (sucrose = 1) 0.91 (glucose = 1)

## Analyses

DETAILED PHYSICOCHEMICAL ANALYSIS					
	Median	Number of samples	Minimum	Maximum	Method
Total solids (%)	66.8	21	66.4	68.9	AOAC, vacuum, 70 °C
Soluble solids (° Brix)	66.6	21	66.2	67.3	Refractometer
Water activity	0.848	21	0.841	0.855	AW meter
Dextrose equivalent	2	21	0	14	Titrimetry
Invert sugar (%)	n/a	n/a	n/a	n/a	Glucometer
Transmittance at 560 nm (%)	42.9	21	12.8	78.1	Spectrophotometer
<b>Colour classes</b>					
Extra Light (AA)	80	60	75	87.8	
Light (A)	68	134	60.5	74.9	
Medium (B)	52	180	44	60.4	
Amber (C)	37	77	27	43.9	
Dark (D)	19	32	0	26.9	
<b>Density (g/ml)</b>					
25 °C	1.326	21	1.324	1.328	Densimeter
4 °C	1.336	21	1.331	1.347	
-20 °C	1.348	21	1.345	1.352	
<b>Viscosity (cp)</b>					
25 °C	135	21	120	182	Brookfield viscometer SC4-31, 60 rpm
4 °C	618	21	519	880	SC4-31, 12 rpm
-20 °C	3,668	21	2,909	5,409	SC4-31, 3 rpm

MICROBIOLOGICAL ANALYSES AFTER 18 MONTHS COMMERCIAL STERILITY		
MICROBIOLOGY	Result	Analysis method
Yeasts (CFU/g)	<5	MFHPB-22
Moulds (CFU/g)	<5	MFHPB-22
Aerobic mesophilic bacteria (CFU/g)	<150	MFHPB-18
<i>Pseudomonas aeruginosa</i> (CFU/g)	<10	ILMA-017
<i>Bacillus cereus</i> (CFU/g)	<25	MFLP-21
Total coliforms (CFU/g)	<10	MFHPB-34
<i>Clostridium</i> spp (CFU/g)	Not detected	ILMA-61/MFHPB-23
<i>Staphylococcus aureus</i> (CFU/g)	<10	MFLP-21

## Nutritional Values

NUTRIENTS	Typical values for 75 ml (100 g)				
	Median	Number of observations	Minimum	Maximum	Method
<b>CARBOHYDRATES</b>					
Sucrose (g)	64.19	500	60.18	67.02	HPLC-RI
Glucose (g)	0.10	498	BQL*	1.45	HPLC-RI
Fructose (g)	0.30	90	0.30	0.41	HPLC-RI
Dextrose (g)	0.60	90	0.60	0.80	HPLC-RI
Complex sugars (g)	1.38	500	0.69	4.77	HPLC-RI
<b>Total carbohydrates</b>	<b>66.57 g</b>				

MINERALS	Median	Number of observations	Minimum	Maximum	Method
	Aluminum (mg)	0.33	498	BQL*	19.82
Arsenic (mg)	BQL*	498	BQL*	0.15	ICP-MS
Cadmium (mg)	BQL*	498	BQL*	0.03	ICP-MS
Calcium (mg)	97.00	600	52.99	235.07	ICP-MS
Copper (mg)	0.15	498	BQL*	9.96	ICP-MS
Iron (mg)	0.32	498	BQL*	16.86	ICP-MS
Magnesium (mg)	20.00	600	12.00	42.03	ICP-MS
Manganese (mg)	2.05	600	0.40	5.70	ICP-MS
Potassium (mg)	226.00	90	167.45	263.11	ICP-MS
Selenium (mg)	BQL*	497	BQL*	0.09	ICP-MS
Sodium (mg)	16.00	90	3.89	32.33	ICP-MS
Zinc (mg)	0.60	600	0.40	2.70	ICP-MS
<b>Total minerals</b>	<b>362.45 mg</b>				

VITAMINS	Median	Number of observations	Minimum	Maximum	Method
	Niacine (mg)	0.08	90	0.03	0.12
Riboflavin (mg)	1.26	90	0.61	2.43	HPLC-DAD
Thiamin (mg)	0.06	90	0.02	0.17	HPLC-DAD
<b>Total vitamins</b>	<b>1.40 mg</b>				

AMINO ACIDS	Median	Number of observations	Minimum	Maximum	Method
	Arginine + Threonine (mg)	46.03	500	6.04	91.82
Leucine (mg)	0.94	500	BQL*	18.90	HPLC-FL
Proline (mg)	44.84	500	4.73	99.63	HPLC-FL
Histidine (mg)	0.72	500	BQL*	3.61	HPLC-FL
<b>Total amino acids</b>	<b>92.53 mg</b>				

\* BQL = Below Quantifiable Limit

## Nutritional Values (cont'd.)

NUTRIENTS	Typical values for 75 ml (100 g)				
	Median	Number of observations	Minimum	Maximum	Method
ORGANIC ACIDS					
Acetic (mg)	252.17	500	95.94	1,160.97	HPLC-UV
Fumaric (mg)	55.17	500	18.78	279.69	HPLC-UV
Gluconic (mg)	105.38	464	49.60	1,268.53	HPLC-UV
Lactic (mg)	98.73	500	57.00	344.30	HPLC-UV
Malic (mg)	4,670.58	500	2,098.15	9,059.55	HPLC-UV
Oxalic (mg)	10.17	332	3.65	33.44	HPLC-UV
Pyruvic (mg)	138.27	500	0.14	565.16	HPLC-UV
Quinic (mg)	68.64	332	21.72	431.64	HPLC-UV
Shikimic (mg)	0.63	332	0.11	2.62	HPLC-UV
Succinic (mg)	172.97	500	73.92	805.15	HPLC-UV
Tartaric (mg)	15.69	332	0.13	15.69	HPLC-UV
<b>Total organic acids</b>	<b>5,588.40 mg</b>				

ANTIOXIDANT Antioxidant capacity	Median	Number of observations	Minimum	Maximum	Method
	<b>All classes combined</b>	<b>472 µmol TE</b>	45	315.8	1,558.06
<b>Colour classes</b>					
<b>Extra Light (AA)</b>	<b>376 µmol TE</b>	9	315.8	470.5	ORAC
<b>Light (A)</b>	<b>411 µmol TE</b>	12	318.7	533.7	ORAC
<b>Medium (B)</b>	<b>485 µmol TE</b>	11	425.1	747.5	ORAC
<b>Amber (C)</b>	<b>754 µmol TE</b>	8	622.15	906.83	ORAC
<b>Dark (D)</b>	<b>1 305 µmol TE</b>	5	813.97	1,558.06	ORAC

POLYPHENOLS 63 phenolic compounds counted to date	Median	Number of observations	Minimum	Maximum	Method
	<b>All classes combined</b>	<b>30.32 mg</b>	500	11.79	129.49
<b>Colour classes</b>					
<b>Extra Light (AA)</b>	<b>18.38 mg</b>	60	11.79	57.05	
<b>Light (A)</b>	<b>24.01 mg</b>	136	13.67	47.06	
<b>Medium (B)</b>	<b>31.62 mg</b>	178	17.08	65.23	
<b>Amber (C)</b>	<b>45.01 mg</b>	94	22.40	91.21	
<b>Dark (D)</b>	<b>56.38 mg</b>	32	24.32	129.49	

## Nutritional Values (cont'd.)

NUTRIENTS	Typical values for 75 ml (100 g)				
	Médiane	Number of observations	Minimum	Maximum	Method
PHYTOHORMONES					
Abscisic acid ABA (µg)	9.12	88	3.12	74.77	UPLC/ESI-MS/MS
Phaseic acid PA (µg)	118.27	88	64.73	738.20	UPLC/ESI-MS/MS
Other phytohormones* (µg)	94.00	88	56.98	158.59	UPLC/ESI-MS/MS
<b>Total phytohormones</b>	<b>221.39 µg</b>				
ENERGY VALUE					
	267 kcal	134	262.5	303.5	Calculations

\* BQL = Below Quantifiable Limit

# Nutrition Facts Tables

CANADA

## GENERAL INFORMATION

Nutrition Facts tables may change depending on use:

- If the product is for industrial use, packagers must use the Nutrition Facts table for 100 g
- If the product is for consumers, packagers must use the Nutrition Facts table for 80 g

These tables are presented for information purposes only.

**Format must be confirmed for your packaging.**

**Consult a specialist to ensure compliance with food and drug regulations (c.r.c., c.870).**

### MAPLE SYRUP 100 g (75 ml)

Valeur nutritive Nutrition Facts	
par 100 g / Per 100 g	
Teneur Amount	% valeur quotidienne % Daily Value
<b>Calories / Calories</b> 270	
<b>Lipides / Fat</b> 0 g	0 %
saturés / Saturated 0 g	0 %
+ trans / Trans 0 g	
<b>Cholestérol / Cholesterol</b> 0 mg	
<b>Sodium / Sodium</b> 10 mg	1 %
<b>Potassium / Potassium</b> 220 mg	6 %
<b>Glucides / Carbohydrate</b> 67 g	22 %
Fibres / Fibre 0 g	0 %
Sucres / Sugars 60 g	
<b>Protéines / Protein</b> 0 g	
<b>Vitamine A / Vitamin A</b>	0 %
<b>Vitamine C / Vitamin C</b>	0 %
<b>Calcium / Calcium</b>	4 %
<b>Fer / Iron</b>	0 %
<b>Riboflavine / Riboflavin</b>	30 %
<b>Magnésium / Magnesium</b>	4 %
<b>Zinc / Zinc</b>	4 %
<b>Manganèse / Manganese</b>	20 %

Valeur nutritive Nutrition Facts	
par 100 g / Per 100 g	
Teneur Amount	% valeur quotidienne % Daily Value
<b>Calories / Calories</b> 270	
<b>Lipides / Fat</b> 0 g	0 %
<b>Sodium / Sodium</b> 10 mg	1 %
<b>Potassium / Potassium</b> 220 mg	6 %
<b>Glucides / Carbohydrate</b> 67 g	22 %
Sucres / Sugars 60 g	
<b>Protéines / Protein</b> 0 g	
<b>Calcium / Calcium</b>	4 %
<b>Riboflavine / Riboflavin</b>	30 %
<b>Magnésium / Magnesium</b>	4 %
<b>Zinc / Zinc</b>	4 %
<b>Manganèse / Manganese</b>	20 %
Source négligeable de saturés, trans, cholestérol, fibres, vitamine A, vitamine C et fer.	
Not a significant source of saturated, trans, cholesterol, fibre, vitamin A, vitamin C or iron.	

### MAPLE SYRUP 80 g (60 ml)

Valeur nutritive Nutrition Facts	
par 1/4 tasse (60 ml) / Per 1/4 cup (60 ml)	
Teneur Amount	% valeur quotidienne % Daily Value
<b>Calories / Calories</b> 220	
<b>Lipides / Fat</b> 0 g	0 %
<b>Sodium / Sodium</b> 10 mg	0 %
<b>Potassium / Potassium</b> 180 mg	5 %
<b>Glucides / Carbohydrate</b> 54 g	18 %
Sucres / Sugars 48 g	
<b>Protéines / Protein</b> 0 g	
<b>Calcium / Calcium</b>	4 %
<b>Riboflavine / Riboflavin</b>	25 %
<b>Magnésium / Magnesium</b>	4 %
<b>Zinc / Zinc</b>	4 %
<b>Manganèse / Manganese</b>	15 %
Source négligeable de saturés, trans, cholestérol, fibres, vitamine A, vitamine C et fer.	
Not a significant source of saturated, trans, cholesterol, fibre, vitamin A, vitamin C or iron.	

## Potential Claims in Canada

### GENERAL NOTES

Claims are based on reference sizes. A reference amount must therefore be indicated for any syrup, including maple syrup. This is 30 ml for use as an ingredient and 60 ml for all other uses. A recommended serving is between 30 ml and 60 ml.

#### Reference amount and recommended serving

Product category	Reference amount	Portion recommandée
Syrups, including chocolate syrup, maple syrup and corn syrup	30 ml if used as ingredients 60 ml for other uses	30–60 ml

### CLAIMS REGARDING NUTRITIONAL VALUE BASED ON MINIMUM VALUES ACCORDING TO CFIA STANDARDS

#### A. VITAMINS AND MINERALS

	Content per reference amount and per serving of stated size (60 ml)*		Claims for vitamins and minerals
Riboflavin	0.39 mg	25 %	Excellent source of riboflavin
Manganese	0.32 mg	15 %	Good source of manganese

\* Note: Data presented in this table correspond to minimum values.

#### B. POLYPHENOLS

**Only quantitative claims are allowed and only outside the Nutrition Facts table.  
Note that using words such as “contains” is not allowed.**

Example:

Quantitative claims written outside the Nutrition Facts table
24.26 mg of polyphenols per 60 ml serving

## Potential Claims in Canada (cont'd.)

### POTENTIAL CLAIMS BASED ON AVERAGE VALUES

#### A. VITAMINS AND MINERALS

	Content per reference amount and per serving of stated size (60 ml)*		Claims for vitamins and minerals
Manganese	1.6 mg	80 %	Excellent source of manganese
Riboflavin	1.02 mg	65 %	Excellent source of riboflavin
Calcium	87.1 mg	7.9 %	Source of calcium
Magnesium	16.75 mg	6.7 %	Source of magnesium
Zinc	0.56 mg	6.2 %	Source of zinc

\* Note: Data presented in this table correspond to average values from bulk syrup.



## **Packaging - Varies by Manufacturer**

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## **Storage and Shelf Life**

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Room temperature if airtight; once opened, cover and store in the refrigerator or freezer to prevent evaporation.

More than 2 years.

## **Freezing**

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Possible.

## **Copyright**

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The information contained in this sheet is provided for information purposes only and is the result of generic analyses of maple syrup conducted by external laboratories based on current knowledge. However, it is important to remember that the product may vary depending on numerous factors, conditions and harvests. This sheet is a practical guide and as such shall not, in any case, be considered a legal opinion on the matter, and the Federation of Quebec Maple Syrup Producers makes no commitment in this regard. You are strongly advised to consult a lawyer for a legal opinion regarding labelling rules. Although the information contained in this sheet was obtained from reliable sources and the Federation of Quebec Maple Syrup Producers has every reason to believe it accurate, its accuracy and completeness are not guaranteed and it is intentionally presented in a summarized, generalized manner. The Federation of Quebec Maple Syrup Producers makes no guarantee or representation either explicit or implicit regarding the accuracy, integrity or usefulness of this sheet, and disclaims all liability resulting from its use or the information contained herein. Anyone who chooses to use this sheet in any way whatsoever, to rely on it or to make a decision based on its contents assumes full responsibility for such choice. It is important to remember that claims and statements must be based on facts and must not be false, misleading, deceptive or likely to create an erroneous impression, as required in paragraph 5(1) of Canada's Food and Drugs Act and article 7 of the Consumer Packaging and Labelling Act.

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